



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

AT

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,318	10/28/2003	Jorge Guillermo Milke-Rojo	130699	4851
7590	10/06/2005		EXAMINER	
Dean D. Small Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102			ZEC, FILIP	
			ART UNIT	PAPER NUMBER
			3744	
DATE MAILED: 10/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/695,318	MILKE-ROJO ET AL.	
	Examiner Filip Zec	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 21 July 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/21/205 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,098,408 to Levinson et al., in view of U.S. Patent Application Publication 20040051984 to Oshino et al. Looking at FIG. 4, one notices the teachings claimed by the applicant, namely a temperature regulator (48) for an X-ray device (22, FIG. 1; col 1, line 25), comprising a controller (60), which receives data from the temperature sensor (54), determines whether the temperature should be raised or lowered (col 7, lines 30-42) and switches (using the voltage driver 110, FIG. 5) the voltage/current contact in the solid state (col 4, line 55) thermoelectric device (30), comprising a positive and a negative

mode (48, 50, FIG. 3) directly connected to a voltage source (col 5, lines 60-61). An external cooling device, a heat sink (32), is connected to the thermoelectric device (50) removing the thermal energy from it. Levinson also teaches that reversing the direction of current reverses the direction of heat pumping, thereby accomplishing the same function as reversing the voltage contact (col 3, lines 9-13). Levinson therefore, discloses applicant's basic inventive concept, substantially as claimed with the exception of stating the use of a heat dissipating plate in contact with the X-ray panel, a cold plate in thermal contact with said heat dissipating plate via a heat pipe and the temperature range of 25-35°C under which the device will be kept. However, Levinson teaches a table into which the user is able to input the temperature range data at which the device will be kept. Oshino teaches a heat dissipating plate (3, FIG. 4) in contact with the X-ray panel (1, FIG. 3), a cold plate (6, FIG. 2) in thermal contact with said heat dissipating plate via a heat pipe to be old in the thermoelectric art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teachings of Oshino to modify the system of Levinson, by specifying the temperature range of 25-35°C at which the device will be kept in order to preserve the energy of the refrigerating device since the normal room temperature is approximately 25-35°C and by adding a heat dissipating plate in contact with the X-ray panel and a cold plate in thermal contact with said heat dissipating plate via a heat pipe in order to prevent thermal deformation of the optical element, caused by the transfer of mechanical stresses to the optical element from the heat-receiving plate (col 2, par [0019]).

4. Claims 1-3, 5-7, 16-19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,940,784 to El-Husayni in view of U.S. Patent

Application Publication 20040051984 to Oshino et al. Looking at FIG. 3A and 3B, one notices the teachings claimed by the applicant, namely a temperature regulator, comprising a controller (64), which receives data from the temperature sensor (18 and 46, FIG. 1A), determines whether the temperature should be raised or lowered and switches the voltage/current contact in the solid state (32 and 54, FIG. 1A) thermoelectric device, comprising a positive and a negative mode (30, 50, FIG. 2) directly connected to a voltage source (60). An external cooling device, a liquid cooling system, is connected to the system removing the thermal energy from the thermoelectric device (40). El-Husayni also teaches that, by reversing the current DC power supply, one reverses the direction of heat pumping, thereby accomplishing the same function as reversing the voltage contact (col 6, lines 58-65). El-Husayni therefore, discloses applicant's basic inventive concept, substantially as claimed with the exception of stating the use of a heat dissipating plate in contact with the X-ray panel and a cold plate in thermal contact with said heat dissipating plate via a heat pipe. Oshino teaches a heat dissipating plate (3, FIG. 4) in contact with the X-ray panel (1, FIG. 3), a cold plate (6, FIG. 2) in thermal contact with said heat dissipating plate via a heat pipe to be old in the thermoelectric art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teachings of Oshino to modify the system of El-Husayni, by adding a heat dissipating plate in contact with the X-ray panel and a cold plate in thermal contact with said heat dissipating plate via a heat pipe in order to prevent thermal deformation of the optical element, caused by the transfer of mechanical stresses to the optical element from the heat-receiving plate (col 2, par [0019]).

5. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshino in view of Levinson as applied to claim 16 above, and further in view of U.S. Patent 6,370,881 to Maydanich. Oshino in view of Levinson discloses applicant's basic inventive concept, a temperature regulator for an X-ray device, substantially as claimed with the exception of using a liquid external heat exchange device for removing thermal energy from the system. Maydanich shows using a liquid cooling system as a secondary cooling system to be old in the temperature regulating art (58, FIG. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Maydanich to modify the system of Oshino in view of Levinson, by using a liquid cooling system as a secondary cooling system in order to improve the quantity of heat energy removed. Also, since the liquid cooling system would require the use of a pump/condenser/evaporator circuit, it would be obvious to have the system away from the X-ray device, in order to prevent possible corrosion defects on the pipes circulating the refrigerant.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,980,049 to Blackmon, Jr., James Bertram teaches a sensor assembly with dual reflectors to offset sensor.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Filip Zec  
Examiner  
Art Unit 3744

FZ



MARC NORMAN  
PRIMARY EXAMINER